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EXAMINER	
VAN HANDEL, MICHAEL P	
ART UNIT	**PAPER NUMBER**
2623	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/840,818	LU, JIN	
	Examiner	Art Unit	
	Michael Van Handel	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is responsive to an Amendment filed 2/28/2007. Claims **1-27** are pending. Claims **1, 3, 12, 13, 15, 22, 24,** and **26** are amended. The examiner hereby withdraws the objection to claim **12** in light of the amendment.

Response to Arguments

1. Applicant's arguments regarding claims **1, 13,** and **22,** filed 2/28/2007, have been fully considered, but they are not persuasive.

Regarding claims **1, 13,** and **22,** the applicant argues that Hicks, III et al. does not teach or suggest a set-top box which is configured to directly receive signals from a service provider and to include a removable circuit having a transceiver to wirelessly transmit and/or receive signals. The examiner respectfully disagrees. Hicks, III et al. discloses a broadband multimedia gateway (BMG) that receives video, audio, and other forms of multimedia content from a variety of broadcasts (e.g., direct digital broadcast satellite TV, digital cable TV, terrestrial broadcast analog and/or digital TV), Intranet, and Internet sources (p. 2, paragraphs 19, 20 & Figs. 1, 2). This meets the limitation of a "digital cable set-top box being configured to directly receive a provided RF signal provided by a service provider," as currently claimed in claims 1 and 13, and meets the limitation of "coupling the set top box to a network for directly receiving incoming signals from the network," as currently claimed in claim 22. Hicks, III et al. further discloses plug-in modules providing wireless communication links for transmitting multimedia content to

other information appliances (p. 2, paragraphs 18, 19; p. 4, paragraph 42; & Figs. 1, 2). The examiner interprets these plug-in modules to be removable circuits having transceivers to wirelessly transmit and/or receive signals.

Further regarding claim **22**, the applicant argues that Laubach et al. does not teach any detachable module or AIM that wirelessly communicates with remote appliances or a removable module having wireless connections with both the set top box and the network, where the removable module is coupled with the set top which is configured to directly receive signals from a service provider. The examiner respectfully disagrees. Laubach et al. discloses a method and apparatus for enhancing the functionalities of a subscriber terminal unit (STU) through the use of different types of application interface modules (AIMs). This is accomplished by incorporating a slot in the STU through which a detachable AIM can be inserted and electrically coupled to the STU (see Abstract). Laubach et al. further discloses that the STUs receive packet data from a headend controller (Fig. 7). This meets the limitation of "coupling the set top box to a network for directly receiving incoming signals from the network," as currently claimed. Laubach et al. further discloses that the interface between the STU and the AIM module can be wireless (col. 12, l. 8-11 & Fig. 9). The examiner notes that, in this situation, the AIM module would be wirelessly coupled to both the STU and the head end, since the AIM is wirelessly connected to the STU and the STU has a wire connection to the head end. Thus, the examiner finds that Laubach et al. meets the limitations of claim 22 as currently claimed.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1, 13** are rejected under 35 U.S.C. 102(e) as being anticipated by Hicks, III et al.

Referring to claims **1** and **13**, Hicks, III et al. discloses a removable circuit apparatus (plug-in module), for use in a digital cable set-top box 100 (broadband multimedia gateway (BMG)) capable of being coupled to a television set (Fig. 1), capable of being inserted into a point of deployment (POD) host interface 142, 143, 144 associated with said digital cable set-top box, said removable circuit apparatus comprising:

- a point of deployment (POD) module interface capable of mating with said POD host interface (p. 2, paragraph 18); and
- an RF transceiver coupled to said POD module interface capable of receiving an incoming baseband signal from said digital cable set-top box (p. 2, paragraphs 18, 20), said digital cable set-top box being configured to directly receive a provided RF signal provided by a service provider (p. 2, paragraphs 19, 20; p. 3, paragraph 37; & p. 5, paragraph 46), and said incoming baseband signal being downconverted from said provided RF signal (the examiner notes that satellite, CATV, and broadband data signals must be downconverted after being received), upconverting said incoming baseband signal to an outgoing RF signal (the examiner notes that a baseband signal must be upconverted prior to being sent over HomeRF, IEEE 802.11, or Bluetooth),

and wirelessly transmitting said outgoing RF signal to at least one wireless communication device proximate said digital cable set-top box (p. 4, paragraph 42), said RF transceiver further capable of wirelessly receiving an incoming RF signal from said at least one wireless communication device, downconverting said incoming RF signal to an outgoing baseband signal, and transmitting said outgoing baseband signal to said digital cable set-top box (the examiner notes that a transceiver is a transmitter and receiver combined into one unit)(Fig. 2).

3. Claim **22** is rejected under 35 U.S.C. 102(e) as being anticipated by Laubach et al.

Referring to claim **22**, Laubach et al. discloses a method for changing the functionality of a consumer electronics device, the consumer electronics device comprising a user interface for allowing a user to experience content and a set top box, the set top box comprising a removable POD module for converting content from a network format to a local format and vice versa, the method comprising the acts of coupling the set top box to a network for directly receiving incoming signals from the network; starting with the set top box coupled with a first removable POD module associated with a first functionality for the device, the first removable POD module having wireless connections with both the set top box and with the network; removing the first POD module; and replacing the first POD module with a second POD module associated with a second functionality for the device, the second removable POD module also having wireless connections with both the set top box and the network (the examiner notes that the subscriber terminal unit (STU) contains a slot through which an application interface module (AIM) can be coupled. The same slot can be used to accept one of several different AIM modules. Different

versions of AIM modules are implemented to provide a variety of enhancements and functionalities. Since the configuration of the AIM module determines the cable services available to the subscriber, and further since the cable operator can authorize or inhibit these services, the examiner interprets the AIM module to be a POD, as claimed. The examiner further notes that Laubach et al. discloses interfacing the AIM module with the STU wirelessly.)(col. 2, l. 57-63; col. 9, l. 49-58; col. 11, l. 63-67; col. 12, l. 1-17; col. 12, l. 52-67; col. 13, l. 1-10; col. 14, l. 44-50; & Fig. 9).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims **2, 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Yukie et al.

Referring to claims **2** and **14**, Hicks, III et al. discloses the removable circuit apparatus as set forth in claims 1 and 13, respectively. Hicks, III et al. does not disclose that the incoming baseband signal and the incoming RF signal comprise Internet Protocol (IP) data packets. Yukie et al. discloses a video display 10 that communicates with base station 14 over a wireless connection 18 through a transceiver for bi-directional communications (col. 3, l. 32-44, 56-62; col. 8, l. 27-42 & Fig. 1). Yukie et al. further discloses that the transceiver be a removable device, such as a PCMCIA card wireless modem (col. 4, l. 64-67 & col. 5, l. 1). Yukie et al. still

further discloses that the data generated by video display 10 will be in Internet Protocol (IP) format (col. 5, l. 66-67) and that the wireless connection between the video display 10 and base station 14 is through a wireless (IP) network (col. 5, l. 14-21 & col. 6, l. 6-10). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify Hicks, III et al. to include generating IP packets and sending and receiving the IP packets over a wireless network, such as that taught by Yukie et al. in order to efficiently send data over a variety of wireless networks.

3. Claims **3**, **6-8**, **15**, **18-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Laubach et al.

Referring to claims **3** and **15**, Hicks, III et al. discloses the removable circuit apparatus as set forth in claims 1 and 13, respectively. Hicks, III et al. does not specifically disclose a data processor coupled to said POD module interface and capable of transmitting to said digital cable set-top box at least one of an audio signal and a video signal capable of being displayed on a screen of said television set, and a memory coupled to said data processor capable of storing a user POD application program executable by said data processor, wherein said user POD application program is operable to cause said data processor to control operation of said RF transceiver. Laubach et al. discloses a subscriber terminal unit containing one or more slots through which an application interface module (AIM) can be inserted and electrically coupled (col. 2, l. 57-63; col. 9, l. 22-34, 49-58; & Fig. 6). Telephony module 1101, Firewire and Universal Serial Bus (USB) module 1301, and ATM module 1401 each contain a microprocessor 1002, which executes operating system software (col. 13, l. 13-15 & Figs. 11, 13, 14). Each of

the modules also contains Read-Only Memory (ROM) 1004 that stores software for the microprocessor and Random Access Memory (RAM) for storing software downloads (col. 13, l. 13-60). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the plug-in module of Hicks, III et al. to include a processor and memory storing software instructions for controlling a modem, such as that taught by Laubach et al. in order to provide a user with a system that can flexibly accommodate different services (Laubach et al. col. 2, l. 11-53).

Referring to claims **6-8** and **18-20**, the combination of Hicks, III et al. and Laubach et al. teaches the removable circuit apparatus as set forth in claims 3 and 15. The combination of Hicks, III et al. and Laubach et al. does not teach that the removable circuit apparatus further comprise a user interface coupled to said data processor capable of receiving user inputs from a keyboard or mouse coupled to said user interface. Laubach et al. discloses an advanced home interface module 1301 providing enhanced network interfaces over Firewire and USB (col. 15, l. 47-57 & Fig. 13). Laubach et al. further discloses that a mouse or keyboard can interface with the STU via the advanced home interface module 1301 (col. 15, l. 57-59). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the plug-in module of Hicks, III et al. in the combination of Hicks, III et al. and Laubach et al. to include an enhanced network interface for supporting a keyboard and a mouse, such as that taught by Laubach et al. in order to provide a user with a system that can flexibly accommodate different network standards (Laubach et al. col. 2, l. 11-53).

4. Claims **4, 5, 16,** and **17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Laubach et al. and further in view of Hylton et al.

Referring to claims **4, 5, 16,** and **17**, the combination of Hicks, III et al. and Laubach et al. teaches the removable circuit apparatus as set forth in claim 3. The combination of Hicks, III et al. and Laubach et al. does not specifically teach that the data processor is capable of receiving user input signals from the digital cable set-top box, wherein the user input signals comprise infrared signals detected by an infrared sensor associated with the digital cable set-top box. Hylton et al. discloses a plug in Transport Interface Module (TIM) 101for use in a set-top terminal 100 (col. 14, l. 2-6, 19-29 & Figs. 1, 4). Hylton et al. further discloses communicating user input data to an infrared transceiver 145 of the set-top terminal, which then supplies the input to the controller of the TIM (col. 19, l. 24-50 & Figs. 4, 5). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the BMG of Hicks, III et al. to include an infrared transceiver and to modify the AIM microprocessor of Laubach et al. to include receiving user inputs via the infrared transceiver, such as that taught by Hylton et al. in order to facilitate user control over multiple interface devices (col. 17, l. 18-32).

5. Claims **9-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Laubach et al. and further in view of Hendricks et al.

Referring to claims **9-11**, the combination of Hicks, III et al. and Laubach et al. teaches the removable circuit apparatus as set forth in claim 3. The combination of Hicks, III et al. and Laubach et al. does not teach that the removable circuit apparatus further comprise a disk storage device capable of storing a user POD video game program and at least one of audio files, video

files, graphics files, and text files associated with said user POD application program. Hendricks et al. discloses a set top terminal 220 that includes a hardware upgrade port 662 for attaching a Level C hardware upgrade (col. 15, l. 58-67; col. 16, l. 1-17; & Fig. 5b). The Level C upgrade includes a CD-ROM storage device 122 for allowing the use of multimedia applications, such as computer games, etc. (col. 27, l. 23-40 & Fig. 12a). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the plug-in module of Hicks, III et al. in the combination of Hicks, II et al. and Laubach et al. to include a CD-ROM storage device for allowing the use of multimedia applications, such as computer games, such as that taught by Hendricks et al. in order to provide a user with more interactive services.
NOTE: The USPTO considers the applicant's "at least one of" language to be anticipated by any reference containing any of the subsequent corresponding elements.

Referring to claim **12**, the combination of Hicks, III et al. and Laubach et al. teaches the removable circuit apparatus as set forth in claim 3. The combination of Hicks, III et al. and Laubach et al. does not teach that the user POD application program further comprises an e-mail program. Hendricks et al. discloses a set top terminal 220 that includes a hardware upgrade port 662 for attaching a Level B hardware upgrade (col. 15, l. 58-67; col. 16, l. 1-17; col. 27, l. 11-22; & Figs. 5b, 12a). The Level B upgrade provides a user with message services, such as electronic mail (col. 22, l. 64- 67 & col. 23, l. 1-10; & Figs. 8, 18, 20a). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the plug-in module of Hicks, III et al. in the combination of Hicks, III et al. and Laubach et al. to provide a user with electronic mail services, such as that taught by Hendricks et al. in order to provide a user with more interactive services.

6. Claim **21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Yukie et al. and further in view of Billmaier.

Referring to claim **21**, the combination of Hicks, III et al. and Yukie et al. teaches the removable circuit apparatus as set forth in claim 14. The combination of Hicks, III et al. and Yukie et al. does not teach that the IP data packets comprise at least one of AM radio baseband signals and FM radio baseband signals. Billmaier discloses sending a radio program to a set top box (STB) over the Internet (col. 2, l. 47-50 & col. 3, l. 33-39, 64-67). A user accesses a radio program by selecting it from a program database 902, KMNO 96.5 FM (Houston), for instance (col. 8, l. 26-57). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the combination of Hicks, III et al. and Yukie et al. to include IP data packets including FM radio baseband signals, such as that taught by Billmaier in order to provide a user with more interactive services.

7. Claim **23** is rejected under 35 U.S.C. 103(a) as being unpatentable over Laubach et al. in view of Hendricks et al.

Referring to claim **23**, Laubach et al. discloses the method of claim 22. Laubach et al. does not disclose that one of the first and second functionalities is one of the group: television, e-mail, digital radio, and at least one video game; and the other of the first and second functionalities is a different one of the group. Hendricks et al. discloses a set top terminal 220 that includes a hardware upgrade port 662 for attaching various hardware upgrades (col. 15, l. 58-67; col. 16, l. 1-17; & Fig. 5b). The Level B upgrade provides a user with message services,

such as electronic mail (col. 22, l. 67 & col. 23, l. 1-10). The Level C upgrade includes a CD-ROM storage device 122 for allowing the use of multimedia applications, such as computer games, etc. (col. 27, l. 23-40 & Fig. 12a). The Level D upgrade includes a digital radio tuner (col. 27, l. 41-65 & Fig. 12b). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the AIM modules of Laubach et al. to include electronic mail, computer games, and digital radio tuners, such as that taught by Hendricks et al. in order to provide a user with more interactive services.

8. Claims **24**, **26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Hendricks et al.

Referring to claims **24** and **26**, Hicks, III et al. discloses the circuit of claims 1 and 13, respectively. Hicks, III et al. does not disclose that the removable circuit apparatus is adapted to enable a respective consumer electronics function for the television set, so that changing between such removable circuit apparatuses changes the function the television set presents to a user. Hendricks et al. discloses a set top terminal 220 that includes a hardware upgrade port 662 for attaching various hardware upgrades that provide different consumer functions (col. 15, l. 58-67; col. 16, l. 1-17; & Fig. 5b). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify Hicks, III et al. to include a plurality of attachable hardware upgrades featuring different consumer functions, such as that taught by Hendricks et al. in order to provide a user with more interactive services.

9. Claims **25, 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks, III et al. in view of Hendricks et al. and further in view of Hylton et al.

Referring to claims **25** and **27**, the combination of Hicks, III et al. and Hendricks et al. teaches the circuit of claims 24 and 26, respectively. The combination of Hicks, III et al. and Hendricks et al. does not teach that the removable circuit apparatus is adapted to act as a security device enabling or blocking a specific data service. Hylton et al. discloses a plug in Transport Interface Module (TIM) 101 for use in a set-top terminal 100 (col. 14, l. 2-6, 19-29 & Figs. 1, 4). The TIM 101 includes a decryption module 207 that controls access to digital broadcast services (col. 19, l. 1-10). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the plug-in modules of Hicks, III et al. in the combination of Hicks, III et al. and Hendricks et al. to include a decryption module that controls access to digital broadcast services, such as that taught by Hylton et al. in order to ensure that a content provider is properly compensated for viewed content.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Van Handel whose telephone number is 571-272-5968. The examiner can normally be reached on 8:00am-5:30pm Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVH

SCOTT E. BELIVEAU
PRIMARY PATENT EXAMINER